

Serial Number: 10/708,393
Filed: 2/27/2004

LOCKHED

Remarks

The Examiner objected to claims 4, 11 and 18 stating that the term "electrodaged" is not clearly understood. "Electrodaged" and "electrodaging" are past and present tense verbs understood by one skilled in the art as the process of applying "electrodag", a trademarked brand of metal loaded paint so well known by those skilled in the art that it has taken on the generic meaning of "metal loaded paint". For the Examiner's information, a manufacturer's literature and material cut-sheet for one of several similar forms of electrodag is attached. The literature unambiguously declares that the trademarked "electrodag" has been used globally in the antenna industry as a reflective / shielding coating material, for over 20 years. Applicant respectfully submits that, because one skilled in the art will readily recognize and understand the unambiguous meaning, scope and breadth of the terms "electrodaged" and "electrodaging" no further explanation of these terms in the specification is necessary.

The Examiner objected to claims 4, 5, 8 and 19 for the various appearances of claims phrasing syntax in the form of "... *action* by one of A, B and C." and "...*element* is one of A, B and C." The Examiner suggests the *element* or *action* cannot be multiple items at the same time, with which the Applicant agrees. Applicant respectfully directs the Examiner's attention to the precursor phrasing "is one of" appearing in each objected claim that clearly delineates that only one, any one, of the following grouping is applied. Groupings linked by either "and" or "or" are both expressly allowed by the MPEP, see 2173.05(h) last paragraph. Therefore, the claims phrasing as originally is filed is proper, definite and unambiguous.

The Examiner rejected claims 1-6 and 9-19 under 35 U.S.C. 102(b) as anticipated by *Kildal*. *Kildal* discloses a range of different vertical shield elements external to the main reflector requiring wavelength specific dimensioning operable only for narrow band operation (col. 7, ln 57-col. 8, ln 7). Each of the vertical shield elements disclosed in *Kildal* are *outside* of the main

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reflector outer rim (*Kildal* fig. 11-14). Conversely, the present invention applies a horizontal shield element with an inner edge that is positioned at or inward of the *inner* diameter of the main reflector distal end (fig. 1-3). The inward facing edge of the present invention, inserted horizontally at the periphery of the antenna's forward signal path operates to inhibit rather than cancel signal spill-over providing a significant broadband rather than frequency specific signal pattern backlobe reduction for the resulting antenna, without resorting to external vertical shield frequency specific signal cancellation geometries for signals that have already spilled over, around / outside of the main reflector distal edge (Spec. Para. 20-21). To clarify the difference(s) between *Kildal* and the present invention, independent claims 1, 10 and 15 have been amended to include a critical limitation to the inner diameter of the conductive ring, partially referenced by original claim 3, now canceled. The amendments clarify that the inner edge of the conductive ring extends inward along the radome to at least the main reflector distal end *inner* diameter. As amended, each and every element of the present non-obvious invention does not appear in the cited reference. Therefore, rejection of claims 1-6 and 9-16 under 35 U.S.C. 102(b) is improper.

The Examiner rejected claim 7 under 35 U.S.C. 103(a) as unpatentable over *Kildal* in view of *Syed*. The Examiner admits *Kildal* fails to disclose an absorber coupled to the inside of the radome periphery and supplies *Syed* therefore. The present application 10/064,594 and application 10/604,756 published as US 20050035923 "Syed" were, at the time the invention of application 10/064,594 was made, owned by Andrew Corporation. Further evidence of the common ownership is recorded in the USPTO assignment records under the date of 8/14/2003, Reel 013874, Frame 0389 and 2/27/2004, Reel 014374, Frame 0874, respectively. Because *Syed* is applicable as prior art, with respect to the present application, only under 35 USC 102(e) due to its application publication within a year of the present application's priority date, any rejection of the present application including *Syed* under 35 U.S.C. 103(a) is improper (35 U.S.C. 103(c), MPEP 706.02(l)(1-3)).

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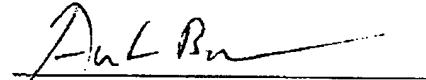
The Examiner rejected claim 8 under 35 U.S.C. 103(a) as unpatentable over *Kildal* in view of an internet posted product sheet by *R&F Products*. This claim was originally filed depending upon claim 1. However, because the absorber element referenced by claim 8 first appears only in claim 7, it is unambiguous that the proper dependency should be with respect to claim 7, not claim 1. Applicant has amended claim 8 accordingly, to depend from claim 7. With respect to claim 7, the Examiner admitted that *Kildal* fails to disclose an absorber coupled to the inside of the radome periphery and supplied *Syed* therefore. *Syed* has been obviated as an applicable reference for a 35 U.S.C. 103(a) rejection of the present application, herein above. The *R&F Products* reference cited by the Examiner also fails to disclose, teach or suggest use of an absorber coupled to the inside of the radome periphery. Therefore rejection of claim 8, now dependent from claim 7, via the currently listed reference(s) and or in a revised rejection including the *Syed* reference, also, is improper.

Having obviated each of the Examiners rejections, applicant respectfully requests that a notice of allowance be issued. Because the Examiner has included a rejection (claim 7) that is based upon 35 U.S.C 102(e)/103 that has been obviated by a demonstration of common ownership at the time the present invention was made, and this claim of the application has not been amended, the Examiner may not make the next Office Action final if a new rejection is made (MPEP 706.07(a), para 5-6). Should the Examiner be inclined to issue an Official Action other than the notice of allowance, Applicant respectfully requests that the Examiner first contact Applicant by telephone at the number listed below.

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BABCOCK IP

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/encl: electrodag product background and data sheet (3 pages)

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office (Fax No 571 273-8300) on July 22, 2005.



Andrew D. Babcock

Antenna Coatings Selection Guide

Acheson's high performance reflective coatings and inks for antenna fabrication, have been in used in antenna applications for over 20 years. Choose from a selection of silver, silver-plated copper, nickel or graphite for superior reflectivity and adhesion.

Product	Feature	Benefit
Electrodag® 550	Nickel coating for thermoplastic, in use over 20 years.	Rugged, cost effective coating that withstands harsh environments.
Electrodag® 456	Nickel coating for SMC or fiber reinforced plastics.	Excellent adhesion and environmental performance.
Electrodag® SP-008A	Silver-plated copper coating. Low VOC. Substrate compatible.	Better reflectivity, excellent adhesion to various substrates.
Electrodag® SP-019	Silver coating. Low VOC. Substrate compatible.	Best reflectivity.
Electrodag® 479SS	Silver screen-printable ink for antenna circuitry	Print custom designs on flexible or rigid plastic.



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Information presented in this selection guide is considered reliable, but conditions and methods of use, which are beyond our control, may modify results. Before adopting our products for commercial use, the user should confirm their suitability. In no case should recommendations or suggestions for the use of our products be understood to sanction violation of any patent.

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Electrodag® 550

**Easy-Mixing, Stable,
Highly Conductive Nickel Coating**

DESCRIPTION

Electrodag 550 is one of a series of Electrodag coatings designed to achieve electromagnetic compatibility.

Electrodag 550 is an **extremely conductive and stable** nickel acrylic lacquer coating that provides excellent long-term shielding protection against radiated EMI. Electrodag 550 is compatible with plastics commonly used in electronic equipment cabinetry. This product is also overcoatable by decorative top coatings with minimum affect on the shielding/decorative coating properties.

ADVANTAGES

- Easy to mix
- Stable electrical properties post heat cycling and humidity (-40°F/-40°C to 160°F/71°C, 120°F/49°C and 95% RH)
- Burnish resistant (electrical resistance minimally affected by wear)
- Air drying for easy processing
- Easy handling/consistent properties
- UL recognized

TYPICAL PROPERTIES (as supplied)

Pigment	: Nickel
Binder	: Acrylic
Color	: Gray
Solids content by weight	: 58.5%-60.5%
Diluent	: Acheson solvent blend SB-1, SB-8, or SB-10 depending on substrate
Density	: 13.5 lbs/gal (1.62 kg/l)
Theoretical coverage	: 421 sq ft/gal @ 1 mil (6.39 m²/kg @ 25µm)
VOC	: 5.47 lb/gal (656 g/l)
Viscosity	: 7500 mPa·s (Brookfield #4 @ 20 rpm)

TYPICAL PROPERTIES (as sprayed)

Drying time	: 20 minute flash off then 30 minutes @ 140°-160°F (60°-71°C), or 16 hours air dry
Recommended dry film thickness	: 2.0-2.5 mils (51.0-63.6 µm)

TYPICAL PROPERTIES (when cured)

Resistivity	: 0.9 ohms/sq/mil
Attenuation	: 60-65 dB @ 2 mils per ASTM D4935-99
Maximum service temperature	: 300°F (149°C)

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guaranty of their accuracy is made. In every case, we urge and recommend that purchasers, before using any product in full scale production, make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the American Chemistry Council® program.

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APPLICATION
DETAILS

Surface Preparation

Surface should be clean and dry.

Mixing/Blending/Dilution

Thoroughly mix **Electrodag 550** on a paint shaker before thinning. (Note: Since **Electrodag 550** is a slow/soft settling material, mixing time when compared to conventional nickel coatings, can be substantially reduced.) For proper dilution, use a ratio of 1:0.8 (product:solvent by volume).

Application

Electrodag 550 should be spray applied using conventional propeller-agitated pressure pot spray systems. Small prototype runs may be sprayed with well-mixed product, using suction cup spray equipment. A nominal 2.0 to 2.5 mil (51.0-63.6 μ) coating thickness is recommended for good shielding performance. However, a thinner coating may be acceptable, depending on the shielding requirements of the device being protected. Avoid dry spray for maximum adhesion and conductivity. During humid days, the addition of no more than 6 fluid ounces per gallon of diacetone alcohol or butyl alcohol to **Electrodag 550** will eliminate blushing. The blushing is characterized by a white tint to the dried surface.

Drying

Electrodag 550 dries to touch in about 5 minutes; to handle in approximately 30 minutes depending on ambient temperature. The product may be force dried beginning with a 20-minute flash-off, then 30 minutes at 140°-160°F (60°-71°C).

Mask Cleaning

For high volume production where masks are often used to prevent coating certain areas, the masks can be cleaned with lacquer thinner or ketone solvents.

STORAGE/SHIPPING
HANDLING

Store below 90°F (32°C) Shelf life for this product is 2 years from date of qualification under original seal. Keep from freezing. Keep container tightly closed when not in use. Empty containers may retain hazardous properties. Follow all MSDS/label warnings even after container is emptied.

APPLICATION
ASSISTANCE

Acheson's Application Specialists are available to assist you in production start-up with **Electrodag 550**. For more information, contact Acheson Colloids Company, (800) 255-1908, or visit our website at www.achesonindustries.com for the Acheson global location nearest you.

HEALTH & SAFETY

Flammable. Harmful if swallowed, inhaled, or absorbed through skin. May cause eye irritation. Wash thoroughly after handling. Keep away from heat, sparks, and open flame. Keep container tightly closed when not in use. Use with adequate ventilation. Avoid breathing vapor. See Acheson's Material Safety Data Sheet for proper first aid instructions.

NOTES:

Electrodag is a registered trade mark of Acheson Industries, Inc.